MANAGEMENT PLANS FOR SIGNIFICANT PLANT AND WILDLIFE HABITAT AREAS OF MARYLAND'S EASTERN SHORE: WORCESTER COUNTY

APPENDIX B TO

FINAL REPORT

SUBMITTED TO:

Coastal Resources Division
Tidewater Administration

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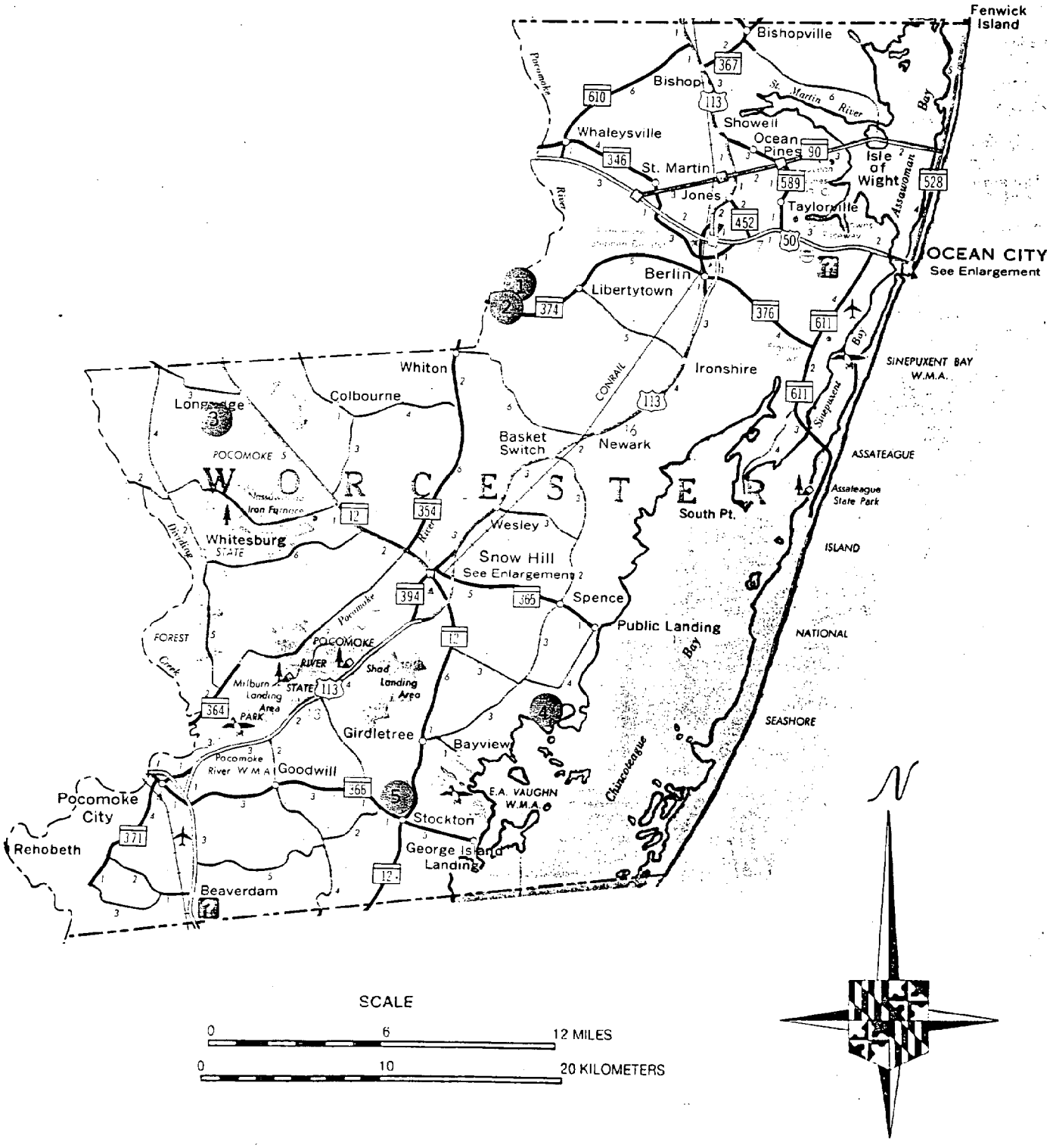
WORCESTER COUNTY



WORCESTER COUNTY: Protection Area Locations*

Protection Area	Site # on County Map
Burbage Crossing Swamp	2
Longridge Powerline	3
Pocomoke Oxbow	1
Scotts Landing Pond	4
Stockton Powerline	5

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* Sites are numbered consecutively from north to south.

PROTECTION AREA SUMMARY

Protection Area Name: Burbage Crossing Swamp

County: Worcester USGS Quad: Ninepin Branch

SUMMARY OF ECOLOGICAL SIGNIFICANCE:

Burbage Crossing Swamp is a diverse cypress swamp in the Pocomoke River floodplain. This swamp is a high quality bottomland hardwood forest dominated by Bald Cypress and old oak trees. Examples of a mature community of this type are rare in Maryland. The forest's diversity of plant species and of age classes within species provides excellent habitat for a variety of wildlife species. The Pocomoke River swamp system is remote and extensive, and therefore supports species not found in more developed areas of the state.

Three rare plant species grow in the moist forest floor of this protection area. One of these species is known from only three other sites in Maryland; none of them is protected. Another rare species is known from fewer than ten sites in Maryland.

OTHER VALUES AND SIGNIFICANCE:

The Pocomoke River has been designated a Maryland Scenic River, and as a result already receives some protection. The protection of contiguous lands such as Burbage Crossing Swamp will contribute to the maintenance of the river's water quality, scenic beauty, and value as habitat for both plants and animals.

THREATS AND MANAGEMENT NEEDS:

Threats

Competition from non-native species as well as weedy native herbs and vines poses a potential threat to the rare plants at this site. Native Trumpet Creeper vines are particularly weedy here, covering large areas of open ground and intermingling with one of the rare species. The non-native Multiflora Rose has invaded the floodplain south of the road that borders the protection area, resulting in a decrease in herbaceous diversity. Removal of trees within the protection area would allow increased light penetration and would promote the growth of these weedy species that may outcompete the rare native plants.

Damage caused by Gypsy Moth larvae is heavy, especially among oaks and maples at the site. If not checked it could seriously threaten the health and survival these trees and, in turn, the integrity of the entire plant community.

Management Needs

Forest cover should be maintained in order to prevent the invasion of weedy species which outcompete the rare plants. The current herbaceous vegetation in the swamp requires a closed canopy for continued survival. The status of weedy native species as well as exotic species should be monitored, and control measures of these species should be considered if the rare plants are threatened.

Gypsy Moth damage should be controlled by using the biological control, Bt, rather than the broad-spectrum, long-lasting insecticide known as Dimilin.

BOUNDARY RECOMMENDATIONS:

The protection area boundary encompasses the rare species habitat, adjacent potential habitat in the floodplain, and the adjacent upland that drains into the swamp and maintains the hydrologic regime of the wetland. The boundary extends upstream approximately 1/2 mile in order to incorporate potential rare species habitat and to ensure the maintenance of high water quality in the river and its floodplain.

SITE DESCRIPTION SUMMARY:

Burbage Crossing Swamp is a 195 acre protection area adjacent to the Pocomoke River. Although the river is channelized, winter and spring runoff from the uplands to the east result in swampy conditions in the broad floodplain. The dominant vegetation consists of large Bald Cypress, Willow Oak, Red Maple, Sweet Gum, ash, and a variety of wetland herbs. The shrub layer is sparse. Grasses and sedges flourish on the slightly higher ground and on the berms created by river channelization. These long narrow mounds run parallel to the river but are broken in some areas, allowing water to enter the main stream.

Prepared by: Judith L. Robertson

Date: November 1988

PROTECTION AREA SUMMARY

Protection Area Name: Longridge Powerline

County: Worcester USGS Quad: Salisbury

SUMMARY OF ECOLOGICAL SIGNIFICANCE:

The bog-like wetlands within this right-of-way support five rare plant species and represent a habitat that is now rare in Maryland. The management of woody vegetation in the right-of-way has created a habitat that is similar to, although not identical to, the herbaceous wetland openings historically created by fire and beaver. The modern practice of fire suppression and the drastic decline of beaver populations have nearly eliminated this type of habitat on the Eastern Shore.

The rare species grow in the organic, saturated soil of the wetlands. This is the only known site in Maryland for one of the rare plants. This species varies greatly in abundance from year to year; hundreds of plants are present in some years. Just three other sites of another rare species are known in the State.

THREATS AND MANAGEMENT NEEDS:

Threats

Change in the quantity or a decline in the quality of the water in the wetlands would produce changes in the vegetation and could eliminate the rare species.

All-terrain-vehicles frequently cross this area and have damaged portions of the wetlands. The vehicles crush the plants, rut the surface, and compact the soil.

Powerline maintenance activities could be detrimental to the rare species. Herbicides used to kill woody vegetation can also kill the rare plants. Mowing during the growing season could inhibit flowering and fruiting and gradually eliminate the rare species. Heavy machinery could compact the soil, rut the surface, and alter drainage patterns in the wetlands.

Heavy equipment used to clear the adjacent forest could change drainage into the rare species' wetland habitat. Clearing of the adjacent forest would promote the growth of weedy species that could outcompete the rare species. In addition, forest clearing could cause sedimentation of the wetlands.

Management Needs

Ditching should not occur within the protection area. Plans for ditching in the surrounding area should be reviewed for potential effects on the rare species' wetland habitat.

Activities that could change the quantity or reduce the quality of water in the wetlands should not be conducted.

All-terrain-vehicle traffic should be controlled through a cooperative effort with the utility company.

A management agreement should be implemented with the utility company in order to avoid damage to the rare species and their habitat during powerline maintenance.

A forested buffer should be maintained along the powerline in order to protect the water supply in the wetlands of the powerline and impede the encroachment of non-native, weedy species.

BOUNDARY RECOMMENDATIONS:

The rare species' wetland habitat and an adjacent forested buffer 100 ft. in width are included in the protection area.

SITE DESCRIPTION SUMMARY:

The Longridge Powerline Protection Area includes 80 acres along a utility right-of-way. Large wetlands dominated by sphagnum, grasses, and sedges occur in shallow depressions along the right-of-way. In addition to the rare species, numerous wildflowers such as asters and St. Johns-wort inhabit the wetlands. Adjacent dryer areas within the managed right-of-way are dominated by Red Chokeberry, boneset, Long-bracted Beggar-ticks, and grasses. Pine and species of oak are abundant in dry portions of the adjacent forest. The swamps adjacent to the powerline are dominated by Red Maple, Sweet Gum, Sweet Pepperbush, and blueberry.

A road forms the northern boundary of the protection area. Large forests extend to the east and west of the powerline. Along both sides of the right-of-way, paths from all-terrain-vehicles border the forest.

Prepared by: Katharine A. McCarthy

Date: December 1988

PROTECTION AREA SUMMARY

Protection Area Name: Pocomoke Oxbow

County: Wicomico, Worcester USGS Quad: Ninepin Branch

SUMMARY OF ECOLOGICAL SIGNIFICANCE:

Pocomoke Oxbow is a 1/4 mile long meander of the Pocomoke River that is permanently isolated from the main branch as a result of river channelization in the 1940's. The oxbow receives hydrologic input only from precipitation and from periodic flooding of the Pocomoke River at times of heavy winter flow.

The hardwood swamp forest adjacent to the oxbow is old and diverse. Portions of the forest have not been cut for approximately 70 years or more and therefore support some very large trees (especially cypress, Willow Oak, and maple). Except in areas which have been opened up naturally as a result of windthrow, there are few weedy species. Older growth forests provide specialized habitat for many animals, such as forest interior breeding birds. Such forests are becoming increasingly rare due to timber management practices in the region.

Two rare species grow in the rich floodplain forest east of the oxbow. One species is known from fewer than ten locations in Maryland, where it is at the northeastern limit of its range. The other species is known from only three other sites in the State.

OTHER VALUES AND SIGNIFICANCE:

An outcrop of ferric rock forms a ridge running parallel to the stream channel about 100 yds. east of the oxbow. It is similar to the ferric material smelted in the old Nassawango iron furnaces and may represent the only remaining natural outcrop in the area that has not been mined.

The old oxbow functions as a pond which provides feeding, resting and breeding habitat for a variety of wildlife species, especially amphibians.

THREATS AND MANAGEMENT NEEDS:

Threats

Timber management within the protection acre would threaten the rare species' survival due to physical destruction,

alteration of the hydrologic regime, and invasion by weedy, non-native plant species.

Other threats to the oxbow and to the rare plant populations are limited because of the inaccessibility of the site. The only signs of unnatural disturbance are old, overgrown, hunter's trails leading from the road to the oxbow, and deer blinds in a few of the trees. Hunting does not pose a threat to the rare plant species.

Management Needs

No timber management or other removal of forest vegetation should be conducted within the protection area. No specific management is necessary other than allowing the old growth forest to succeed naturally.

BOUNDARY RECOMMENDATIONS:

The protection area boundary includes the oxbow, the rare species habitat, and the older growth floodplain forest on either side of the oxbow. On the west the boundary extends to the channelized Pocomoke River. On the east it extends to a road just above the edge of the floodplain. Inclusion of the broad floodplain forest contiguous with the rare species habitat provides adjacent potential rare species habitat, a forested buffer, and habitat for forest interior dwelling species.

SITE DESCRIPTION SUMMARY:

Pocomoke Oxbow Protection Area is a 95 acre site containing a narrow, crescent-shaped body of water located approximately 100 yds. east of the channelized Pocomoke River. During the growing season the oxbow receives little hydrologic input except from precipitation. The only floating vegetation consists of a few small patches of Spatterdock and some duckweed along the pond margins.

To the east of the oxbow is a 300 yd. wide hardwood swamp forest which is dominated by large Red Maples, Bald Cypresses, Willow Oaks, Black Gums, and Sweet Gums. Spicebush and Pawpaw are thick in the understory. Grasses and the two rare species occupy a zone about 30 yds. wide east of the oxbow. Jewelweed and Blackberry are abundant in several natural openings in the forest canopy. A narrow ridge of ferric rock outcrop runs in a north-south direction for an undetermined length, approximately 100 yds. east of the oxbow.

Along the eastern border of the protection area is a 100 ft. wide slope which rises about 18 ft. from the floodplain and contains a mixed forest on sandy soils.

Prepared by: Judith L. Robertson

Date: November 1988

PROTECTION AREA SUMMARY

Protection Area Name: Scotts Landing Pond

County: Worcester USGS Quad: Boxiron

SUMMARY OF ECOLOGICAL SIGNIFICANCE:

Scotts Landing Pond is a one-acre seasonal pond. Seasonal ponds are centripetally-drained, non-tidal wetlands and are considered unique natural communities because they are the only remaining naturally open freshwater wetlands on the interior of the Coastal Plain. These ponds are highly threatened because they are easily affected by agricultural drainage or other hydrological disturbances.

This particular seasonal pond is unusual in that it very rarely dries out. As a result, it is used as a year-round feeding site by many types of birds and other forms of wildlife.

Three rare herbaceous plant species inhabit this protection area. Two rare plants grow in the swampy woods adjacent to the seasonal pond. A third rare species grows at the edges of the pond. This species is known from fewer than 10 locations in Maryland.

OTHER VALUES AND SIGNIFICANCE:

The pond also supports a variety of reptiles and amphibians. One of these is the Red-spotted Newt (Notophthalmus viridescens viridescens). The form found here is unusual in that it does not pass through the land stage (red eft) but remains aquatic throughout its life cycle, becoming sexually mature in the larval stage.

The salt marsh on the eastern side of the protection area provides nutrients for large numbers of invertebrates which form the basis of aquatic food chains.

THREATS AND MANAGEMENT NEEDS:

Threats

Alteration of the local hydrology could eliminate the rare species. The salt marsh has been ditched to control mosquitoes. As a result of these ditches, the water table may decline in the wetland forest and shrubs may encroach and exclude the rare

herbaceous species. A ditch currently drains the pond. If this ditch is maintained, it could eventually lower the water table sufficiently to allow the establishment of woody species within the pond.

Logging would threaten the survival of the rare plant species. Due to severe disturbance to the habitat, canopy openings created by logging are usually invaded by non-native, weedy species. Near the openings, the additional light promotes the growth of shrubs and vines. These weedy species and shrubs could exclude the rare species.

Management Needs

The natural hydrology of the protection area should be restored and maintained. Existing drainage ditches have begun to fill with sediment. The process of sedimentation of the ditches near the protection area should be allowed to continue, so that no further draining of the wetland forest takes place.

No removal of forest vegetation should occur within the protection area. One of the rare plant species requires a closed tree canopy with few shrubs in the understory.

BOUNDARY RECOMMENDATIONS:

The protection area boundary encompasses the seasonal pond, the surrounding wetland forest containing the rare species, and a forested buffer. The buffer includes the forested area which drains into the pond. It also incorporates the stream east of the pond and its salt marsh borders, in order to prevent further disruption of the hydrology of the protected wetlands.

SITE DESCRIPTION SUMMARY:

Scotts Landing Pond Protection Area is a 55 acre site containing a one-acre, open water, seasonal pond surrounded by a forested wetland. The perimeter of the pond is vegetated with sedges and shrubs such as blueberry, American Holly, and Wax Myrtle. The dominant soil type near the pond, and in the wetland forest to the north and east, is termed mixed alluvial land. This soil has been washed out from adjacent streams and is composed of a well-mixed combination of acidic sand, silt and clay.

Surrounding the pond is a mixed pine-hardwood forest which is drained by several creeks flowing eastward into the bay. It is dominated by Sweet Gum, Red Maple, and Loblolly Pine and has an herbaceous understory consisting mainly of ferns, Partridge Berry, and Poison Ivy. In some areas it is quite swampy,

providing good habitat for the rare plant species. A shrubby swale in the woods south of the pond supports Whorled Water-Pennywort. Footpaths run from the road west of the pond, around the pond, and to the salt marsh to the east.

To the east of the swamp forest is a major stream surrounded by a narrow band of salt marsh dominated by cattails and cordgrasses. The marsh has been ditched to control mosquitoes, and is contiguous with an extensive salt marsh south and east of the protection area.

Prepared by: Judith L. Robertson

Date: November 1988

PROTECTION AREA SUMMARY

Protection Area Name: Stockton Powerline

County: Worcester USGS Quad: Girdletree

SUMMARY OF ECOLOGICAL SIGNIFICANCE:

The open, bog-like wetlands within the Stockton Powerline right-of-way represent a habitat that was historically more common on the Eastern Shore. Fire and beaver activity created openings with few trees or shrubs. The modern practice of fire suppression and the drastic decline of beaver populations have nearly eliminated these natural forces. The management of woody vegetation in the right-of-way by mowing and applying herbicide has created a habitat that is similar to, although not identical to, the herbaceous openings historically created by fire and beaver.

Six rare species of plants grow in the unusual wetlands of this right-of-way. This is the only site known in Maryland for one of these species. Another species is known to occur in just one other site in the State. Three other rare species are known from fewer than ten other sites in Maryland.

OTHER VALUES AND SIGNIFICANCE:

These wetlands are part of the headwaters of a creek that flows directly into the Chincoteague Bay. Protection of the wetlands and the adjacent uplands that flow into them will contribute to the maintenance of water quality in the bay.

THREATS AND MANAGEMENT NEEDS:

Threats

Activities related to powerline maintenance and changes in the quality or quantity of water in the wetlands are the greatest threats to this area. Herbicides used to kill woody vegetation may also destroy rare plants. Mowing during the growing season could inhibit the flowering and fruiting of the rare species and eventually eliminate these species from the wetland. The use of heavy machinery for powerline maintenance could crush the rare plants and destroy the rare habitat by compacting the soil and creating deep ruts that change the drainage patterns of the wetland.

All-terrain-vehicles may also damage the rare plants and their wetland habitat. Traffic is heavy on the sand road next to the powerline, and the vehicles often wander from the road.

Management Needs

A management agreement should be implemented with the utility company in order to avoid destruction of the rare plants by herbicides, mowing, or by heavy vehicles.

All-terrain-vehicle traffic should be controlled through a cooperative effort with the utility company.

Trees within 200 ft. of the wetland should not be cut. If trees are to be harvested from the protection area outside of this 200 ft. buffer, only selective cutting should occur. The ditching or drainage of wetlands should not occur within the protection area. Plans for ditching or drainage of land near the protection area should be reviewed for potential effects on the rare species' wetland habitat; detrimental effects should be avoided.

BOUNDARY RECOMMENDATIONS:

The protection area boundary includes the rare species' wetland habitat, adjacent wetlands, and adjacent uplands that feed these wetlands. The eastern boundary parallels the powerline but extends eastward 200 ft. to include portions of the swamps surrounding the rare species' habitat.

SITE DESCRIPTION SUMMARY:

The Stockton Powerline Protection Area encompasses 195 acres along a utility company right-of-way. Wetlands occur on both sides of a hill at the base of the slopes. Streams flow from the wetlands eastward into the Chincoteague Bay. Sphagnum is abundant in these wetlands and the soil is extremely sandy. Sedges, grasses, and Maryland Meadow-beauty are common in the wetlands of the powerline. Arrow-wood and Red Maple saplings are the most abundant woody species. Weedy species such as Joe-pye-weed and Pokeweed grow in the dryer openings uphill from the wetlands. Young forest of pine and mixed hardwoods border the powerline to the east and west.

An unpaved road follows the eastern edge of the powerline. A ditch parallels this road. Fields border the protection area to the north, west, and east.

Prepared by: Katharine A. McCarthy

Date: December 1988